

**BEFORE THE  
PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA**

**IN THE MATTER OF:**

**Application of Duke Energy Progress,  
LLC for Adjustments in Electric Rate  
Schedules and Tariffs and Request for  
an Accounting Order**

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**DOCKET NO. 2018-318-E**

**DIRECT TESTIMONY OF  
  
DR. JAY ZARNIKAU  
  
ON BEHALF OF  
  
NUCOR STEEL—SOUTH CAROLINA**

**March 4, 2019**

**I. INTRODUCTION**

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is Jay Zarnikau. My business address is 1515 Capital of Texas Hwy, South, Suite 110, Austin, Texas, 78746.

**Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

A. I am a vice president of Frontier Energy. With a professional staff of nearly 100, our firm provides assistance to energy consumers, electric and gas utilities, and government agencies on topics related to energy efficiency program design, implementation, and evaluation; energy engineering; energy economics and pricing; rate design; alternative transportation; resource planning; and regulatory policy.

I am also a Visiting (adjunct) Professor at The University of Texas. I teach graduate-level courses in applied statistics and energy economics in the Department of Statistics, Department of Economics, and the LBJ School of Public Affairs.

**Q. PLEASE STATE BRIEFLY YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL QUALIFICATIONS.**

A. I have a Ph.D. degree in Economics from the University of Texas. I completed undergraduate studies in Business Administration and Economics at the State University of New York and McGill University in Canada.

From 1983 through 1991, I was employed by the Public Utility Commission of Texas, where I served as the Manager of Economic Analysis from 1985 through 1988, as the Assistant Director of the Electric Division from 1987 to 1988, and as the Director of Electric Utility Regulation from 1988 to 1991. From 1991 through 1993, I held a faculty-level research position at The University of Texas College of Engineering Center for Energy Studies. I served as a vice president at Planergy, Inc. from 1992 to 1999. From 1999 to 2017, I was the president and a principal of Frontier Associates LLC. Frontier

1 Associates LLC merged with four other companies in 2018 to form Frontier Energy. I  
2 have taught courses at The University of Texas since 2003.

3 I have authored or coauthored over 75 articles on energy-related topics, most of which  
4 appear in peer-reviewed academic journals.

5 **Q. HAVE YOU TESTIFIED IN OTHER UTILITY PROCEEDINGS?**

6 A. I have previously testified before utility regulatory commissions in Texas, California,  
7 Virginia, West Virginia, Arkansas, Pennsylvania, and Arizona. My testimony has  
8 addressed a variety of topics including cost allocation and rate design, energy efficiency  
9 and demand-side management, demand response and curtailable/interruptible rates,  
10 forecasting, computer modeling, fuel costs, energy and utility regulatory policy issues, and  
11 resource planning.

12 **Q. ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?**

13 A. I am appearing on behalf of Nucor Steel – South Carolina, a Division of Nucor Corporation  
14 (“Nucor Steel” or “Nucor”).

15 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

16 A. The purpose of my testimony is to analyze and address certain issues related to the rate  
17 increase application of Duke Energy Progress, LLC (“DEP” or “Company”) in this  
18 proceeding, and to offer my conclusions and recommendations as to DEP’s proposed  
19 ratemaking methodology and rates.

20 **Q. WHAT MATERIALS DID YOU REVIEW IN ORDER TO PREPARE YOUR**  
21 **TESTIMONY?**

22 A. I reviewed relevant portions of: DEP’s rate application; DEP’s direct testimony and  
23 supporting materials; information provided in response to information requests in this case;  
24 materials from other proceedings relevant to the issues I address in my testimony; public  
25 reports filed by DEP and others at various commissions and regulatory agencies; and other  
26 publicly-available information on electric rate issues.

1                   **II.     SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS**

2     **Q.     PLEASE SUMMARIZE YOUR CONCLUSIONS.**

3     A.     My principal conclusions are as follows:

- 4           •     DEP proposes a multi-year rate increase in its application with rates designed to  
5                 permanently increase South Carolina retail revenues by \$69 million beginning in 2019,  
6                 offset by a roughly \$10 million credit for the first year of the Excess Deferred Income  
7                 Tax (EDIT) Rider, for a net \$59 million revenue increase in year one. DEP also  
8                 proposes additional increases in 2020 and 2021 under its Grid Improvement Plan  
9                 Phases 1 & 2.
- 10          •     According to DEP, the first-year increase is a net 10.3% overall rate increase; without  
11                 the EDIT Rider credit, DEP indicates that the permanent increase is 12%.<sup>1</sup> These  
12                 percentage figures reflect the increase as a percentage of total revenues, including fuel-  
13                 related revenues and other recovery clause/rider revenues that are not subject to this  
14                 proceeding. When costs like fuel that are passed through under other riders and are not  
15                 reviewed in this case or affected by this rate increase are removed from the equation,  
16                 the numbers reveal that the actual net base rate increase to the system in the first year  
17                 is much larger – roughly 16%.
- 18          •     Particularly when considered in light of the recent base rate increases in 2017 and 2018,  
19                 another substantial base rate increase would have significant impacts on consumers in  
20                 DEP's South Carolina service territory. Economic development and retention are  
21                 particularly susceptible to impacts from utility rate increases. For example, electric  
22                 energy is a major expense in the production processes of many large industrial  
23                 customers, and another base rate increase will make it more difficult for these  
24                 businesses to be competitive in the markets in which they compete. Since industry  
25                 located in the area must compete for customers and capital dollars with industry located

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<sup>1</sup> See Bateman Exhibit 2.

1 in other areas, it is important that rates be maintained at a reasonable level and increases  
2 be mitigated where possible.

- 3 • DEP's curtailable/interruptible rate schedules have provided considerable benefits and  
4 value to the DEP system over many years:

- 5 ○ These schedules provide the utility with the ability to call for a  
6 curtailment/interruption of service (reduction of load down to designated firm  
7 service levels) under certain conditions in exchange for a reduced price or rate  
8 credit to such customers reflective of the lower quality and cost of service. (The  
9 terms "curtailable," "interruptible" and "non-firm" are all used to refer to these  
10 types of service and so I will use these terms interchangeably.)

- 11 ○ Curtailable load helps DEP avoid the need and cost to construct or acquire  
12 costly capacity, helps increase the reliability of the system in emergencies,  
13 reduces peak demand when necessary, and provides economic development and  
14 industry retention benefits.

- 15 ○ The benefits and reduced demand-related costs of curtailable load should be  
16 properly reflected in class cost allocation, class revenue increase allocation and  
17 rate design.

- 18 ○ In this case, DEP's capacity cost allocation approach in its class cost of service  
19 study fails to properly reflect the benefits and reduced costs associated with  
20 curtailable load and should be modified. Capacity costs should be allocated  
21 based on firm peak demand only (with curtailable loads removed or not  
22 included), since curtailable loads may be curtailed at system peak or any other  
23 time if necessary in DEP's opinion.

- 24 • DEP requests approval for a Grid Improvement Plan rate mechanism to recover the  
25 costs of certain investments, consisting primarily of distribution and transmission  
26 projects that DEP plans to make in 2019 - 2021:

- These projects are detailed in DEP's Grid Improvement Plan, which DEP requests that the Commission approve in this case. DEP does not propose rates related to the projects planned for 2021.
  - Review and any approval of projects for 2021, without proposed rates, would be premature.
  - Given the nature of the investments, recovering the cost of these investments through the special rate mechanism proposed by DEP could be a reasonable approach if DEP does not otherwise intend to have a base rate increase during the same period.
  - The cost allocation mechanism under the Grid Improvement Plan rate proposal is reasonable and appropriate.
  - Evaluating the prudence and reasonableness of the specific investments would be best accomplished after the investments are made. However, under DEP's proposal, the opportunity to engage in an after-the-fact review of completed projects is limited. Modifications to DEP's proposal can be made to provide for a process by which all interested stakeholders can participate in any limited review and if necessary, have the option to request the Commission to hold a proceeding to more extensively evaluate the prudence and costs of particular projects after they are complete and before they are permanently included in rates.
- For years, consumers paid for the costs associated with the since-terminated Yucca Mountain nuclear waste storage project based on a cents-per-kWh charge included in the fuel factor. DEP has been successful in its lawsuits against the U.S. Department of Energy ("DOE") regarding the failed project, winning significant litigation awards in 2011, 2014, and 2018. DEP's has treated the litigation awards as an offset to operation and maintenance expenses in the years in which an award was received and as a reduction to plant in-service. This treatment fails to promptly and fairly share the

1 benefits of the litigation awards with ratepayers, even though ratepayers were the  
2 source of the funds DEP paid to DOE over the years for the Yucca Mountain project.

3 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.**

4 A. I recommend the following:

- 5 • In evaluating DEP's application, the cost impact of the Company's proposed base rate  
6 increase upon consumers, including the effects on large industrial energy consumers  
7 and the health of the economy in DEP's service territory, should be carefully  
8 considered. Mitigation of these impacts should be an important consideration in  
9 determining the various rate and policy issues in this proceeding.
- 10 • The benefits and reduced capacity costs associated with curtailable rates should be  
11 explicitly recognized in DEP's class cost of service study. The 1 Summer CP capacity  
12 cost allocation method proposed by DEP should be modified so that the allocation  
13 factors are based on class firm coincident peak demands, which would accurately  
14 reflect that curtailable load can be curtailed at system peak as necessary and that DEP  
15 has avoided capacity costs as a result of the curtailability of this load.
- 16 • Any approval of the Grid Improvement Plan and the proposed Phase 1 and Phase 2  
17 rates in this case should be conditioned on the following modifications:
  - 18 ○ DEP commits not to seek a separate base rate increase to take effect prior to  
19 June 2022;
  - 20 ○ Investments which DEP projects to make in 2021 would not be approved as part  
21 of the Grid Improvement Plan in this case; and
  - 22 ○ The after-the-fact review process for Grid Improvement Plan projects would be  
23 expanded to allow for participation by any interested stakeholder and for a more  
24 meaningful prudence review upon the request of ORS or an interested party. In  
25 such review, DEP would have the burden of proof to demonstrate  
26 reasonableness and prudence of all costs it seeks to recover.

- Some or all of the South Carolina retail share of the litigation awards that DEP recovered from the U.S. government as a result of the decision to terminate the Yucca Mountain project should be returned to ratepayers as quickly as practical and on the same basis in which such costs were charged to DEP ratepayers – i.e., as a per kWh credit through a rider for this purpose.

### **III. NUCOR STEEL'S INTEREST IN THIS PROCEEDING**

#### **Q. PLEASE DESCRIBE NUCOR STEEL.**

A. Headquartered in Charlotte, North Carolina, Nucor Corporation is the largest steel producer in North America, as well as the largest recycler. Nucor Corporation owns and operates a number of steel-producing facilities in South Carolina and nationwide.

Nucor Corporation's steelmaking facility located in Darlington (Nucor Steel – South Carolina) is one of DEP's largest consumers of electricity. Constructed in 1969, the Nucor Steel facility in Darlington was Nucor Corporation's first steel mill.

#### **Q. HOW DOES THE COST OF ELECTRICITY AFFECT NUCOR STEEL'S OPERATIONS?**

A. Electricity is a very important input to the steelmaking process and tends to be one of the highest variable input costs in steel production. Managing electric costs is critical for Nucor Steel and its ability to remain competitive with other steel producers. Even in the best of times, competition requires Nucor to carefully and aggressively control its input costs. Each Nucor facility nationwide competes not only for market orders, but also for internal capital to undertake improvements in its facility. Since its electric costs are determined by regulated rates, Nucor has actively participated in this Commission's regulatory proceedings over many years.

Nucor Steel uses electric arc furnace technology to melt scrap steel in order to recycle it for use in new steel products. Making steel from scrap using arc furnace technology is much more energy efficient than the traditional, integrated steel making process – the

process of recycling recaptures much of the energy already embodied in the steel scrap. Nevertheless, the steel making process still uses massive amounts of electricity and results in substantial electric bills.

#### IV. IMPACTS OF PROPOSED BASE RATE INCREASES

##### **Q. HAVE DEP'S BASE RATES BEEN RISING?**

A. Yes. After a long period between the late 1980's and 2016 during which DEP did not have a base rate case, DEP sought a 14.5% overall base rate increase in 2016. A settlement agreement providing for a base rate increase was approved in Docket No. 2016-227-E. In that case, the Commission approved an increase in DEP's revenue of approximately \$37.6 million (an overall rate increase of 6.93%) in 2017, and an additional revenue increase of approximately \$18.5 million (an additional overall rate increase of 3.4%) in 2018.<sup>2</sup> In the current case, DEP proposes to increase annual revenues by approximately \$59 million (a 10.3% overall rate increase) on a net basis in 2019 (a \$69 million, 12% permanent rate increase with an EDIT Rider \$10 million offset in the first year), followed by additional increases through the Grid Modernization Plan of approximately \$5.1 million in 2020 and \$5.8 million in 2021. To summarize, if DEP's proposal is approved, DEP's customers will see base rate increases in five consecutive years. The collective impact of these increases, along with the potential for future increases, is particularly concerning for consumers.

##### **Q. ARE ADDITIONAL DEP BASE RATE INCREASES LIKELY IN THE COMING YEARS?**

A. Yes. It is impossible to know for sure if and when DEP will seek to increase base rates further after this case is concluded, but indications are that DEP is considering additional rate increases in the near future. For example, in a recent investor presentation, Duke Energy indicated that it is "planning for multiple rate cases" in North Carolina and South Carolina between 2019 and 2022.<sup>3</sup> In addition, DEP has identified a number of issues in its filing that are likely to result at some point in substantial additional rate increase

<sup>2</sup> Docket No. 2016-227-E, Order No. 2016-871 at 9 (December 21, 2016).

<sup>3</sup> Duke Energy Fall Update 2018 Investor Presentation, slide 15.

1 proposals such as storm costs, additional costs for coal ash basin closure, and investment  
2 in new facilities (both grid improvement and more traditional facility investment).

3 **Q. IF APPROVED BY THE COMMISSION, WHAT WOULD BE THE IMPACT OF**  
4 **THE COMPANY'S CURRENT PROPOSAL ON INDUSTRIAL CUSTOMERS?**

5 A. DEP's proposed rate increase, if approved, will make it more difficult for manufacturers in  
6 DEP's South Carolina service area to be competitive.

7 **Q. HAS LOSS OF INDUSTRIAL LOAD BEEN A CONCERN FOR DEP?**

8 A. Yes. In DEP's recent rate case in North Carolina, the North Carolina Commission  
9 approved a job retention rider "designed to stem further loss of industry, industrial  
10 production and industrial jobs in DEP's service territory."<sup>4</sup> DEP testified about the  
11 significant number of manufacturing facilities in North Carolina that have ceased  
12 operations and indicated that DEP's integrated resource plan showed a steady decline in  
13 the number of industrial customers. In approving the rider, the North Carolina Commission  
14 recognized the negative impacts of the loss of industrial load on the state. A similar job  
15 retention rider was also approved in North Carolina for Duke Energy Carolinas. This  
16 evidence highlights the risks associated with the loss of industrial load and demonstrates  
17 that the impacts of higher electric prices on industrial retention and economic development  
18 are an important factor to consider.

19 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS**  
20 **RELATED TO THE POTENTIAL IMPACTS OF DEP'S PROPOSED RATE**  
21 **INCREASE.**

22 A. DEP's proposed rate increase continues a trend toward higher base rates that began in 2017,  
23 and that may well continue into the future with additional rate increases. For energy-  
24 intensive industries in DEP's service territory, increasing base electric rates increases a  
25 major production cost and risks erosion of competitive position. In evaluating the various

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<sup>4</sup> In the Matter of Application by Duke Energy Progress LLC for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina, Docket No. E-2, Sub 1142 et al, Order Accepting Stipulation, Deciding Contested Issues and Granting Partial Rate Increase at 129 (February 23, 2018).

components of DEP's proposed rate increase in this case, the impacts of the proposed increase on economic development and retention should be considered and reasonable measures should be employed to maintain competitive rates and mitigate increases for all of DEP's customers over the long term.

## **V. CURTAILABLE/INTERRUPTIBLE LOAD**

### **Q. DOES DEP HAVE CURTAILABLE/INTERRUPTIBLE RATES?**

A. Yes. These rates may be referred to interchangeably as "curtailable," "interruptible" or "non-firm" (DEP refers to the rates as "curtailable"). Curtailable rates permit DEP to interrupt service to curtailable load as necessary to avoid negative impacts on firm service – typically around peak times. During such curtailments, curtailable customers must reduce their load down to their designated firm level on reasonable notice. This frees up capacity on the grid to serve other customers in times of system need.

### **Q. IS NUCOR SERVED UNDER A DEP CURTAILABLE RATE?**

A. Yes.

### **Q. WHY DOES NUCOR STEEL TAKE CURTAILABLE SERVICE?**

A. All things being equal, Nucor Steel (and presumably any customer) would prefer to be a firm customer. By agreeing to be curtailable, Nucor agrees to be subject to capacity/emergency curtailments of its operations at any time on short notice. In effect, as a curtailable customer, Nucor agrees to an inferior level of electric service as compared to a firm customer. Nucor takes curtailable service to keep its electric costs as competitive as possible.

### **Q. DOES CURTAILABLE SERVICE PROVIDE SUBSTANTIAL BENEFITS TO DEP AND ITS OTHER CUSTOMERS?**

A. Yes. Curtailable service provides numerous benefits to the system and is a form of demand response. It permits DEP to avoid the construction or acquisition of generating capacity

and reserves and the associated capacity costs to supply curtailable load at peak times. Curtailable load also helps DEP avoid costs associated with transmission capacity and losses, as well as avoiding high energy costs when curtailments are called. Further, strong curtailable rates also provide important economic development benefits in attracting and retaining large, energy intensive customers like Nucor who can manage the risks of curtailable service.

**Q. DOES CURTAILABLE LOAD SUPPORT SYSTEM RELIABILITY?**

A. Absolutely. Curtailable load supports system reliability by allowing DEP to quickly pull a large amount of load off the system in cases where reliability is threatened due to a capacity shortage or other system emergency. Under the LGS-CUR-TOU tariff, for example, a curtailment may be called when DEP “in its opinion, does not have adequate capacity and reserves available to meet the anticipated customer requirements.” This language does not distinguish between inadequate generation or transmission capacity.

In effect, large curtailable loads are a form of insurance policy for the grid in the event capacity is short or an emergency occurs. This capability is even more important today with extreme weather events and the introduction of new resources with different operating characteristics to the grid. As an illustration, in its November 2011 *Assessment of Demand Response & Advanced Metering - Staff Report*, the Federal Energy Regulatory Commission concluded that demand response resources (like curtailable load) “made significant contributions to balancing supply and demand during system emergencies for several RTOs and ISOs.”<sup>5</sup>

The reliability benefit of curtailable load to the DEP system was demonstrated during the extremely cold weather in January 2018, where Nucor’s curtailable service was interrupted for multiple hours on multiple days. Evidently it was necessary for DEP to call upon these curtailable loads during these events to help support system reliability.

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<sup>5</sup> Federal Energy Regulatory Commission, *Assessment of Demand Response & Advanced Metering – Staff Report* at 9 (November 2011).

1 **Q. DOES DEP'S INTEGRATED RESOURCE PLAN ("IRP") REFLECT THE**  
2 **BENEFITS FROM DEP'S LARGE LOAD CURTAILABLE PROGRAMS?**

3 A. Yes. On pages 139-140 of its 2018 South Carolina IRP, DEP discusses its demand side  
4 programs that were in effect prior to 2018 and are still in effect. Curtailable rates are  
5 specifically identified as providing 284 MW of summer and 241 MW of winter capacity  
6 and notes that the "energy savings impacts of these existing programs are embedded within  
7 DEP's load and energy forecasts." Similarly, on pages 145-146, DEP identifies projected  
8 MW load impacts of its DSM programs including a "Summer Peak MW Reduction" of 284  
9 MW from Large Load Curtailable in 2018, along with a "Winter Peak MW Reduction" of  
10 241 MW, recognizing that these programs offer the potential for DEP, in its discretion, to  
11 reduce either peak as necessary by calling for a curtailment.

12 **Q. IN YOUR VIEW, IS THE VALUE AND COST OF SERVING CURTAILABLE**  
13 **LOAD PROPERLY REFLECTED IN DEP'S CLASS COST OF SERVICE STUDY**  
14 **IN THIS CASE?**

15 A. No. DEP included curtailable demands in the class peak demands used in the peak demand  
16 allocator. DEP did not remove non-firm load or make any other adjustment to reflect the  
17 ability to curtail such curtailable load when performing the allocation of costs among  
18 customer classes. DEP has in effect treated the non-firm load as firm load for purposes of  
19 cost allocation. This is not just and reasonable, but fortunately this problem can be  
20 corrected.

21 **Q. WHAT DO YOU RECOMMEND ON THIS ISSUE?**

22 A. I recommend that the demand cost allocation factors in the class cost of service study be  
23 modified to properly reflect cost causation related to curtailable loads. Ideally this  
24 modification would be done in this case, but at minimum, should be required for the next  
25 rate increase proceeding.

26 Specifically, the curtailable load should not be included in the CP in determining the  
27 summer CP demand allocation factors for each class – in other words, DEP should use  
28 class firm coincident peak demand for allocation purposes. This would produce more

reasonable results by reflecting the fact that curtailable load can be curtailed if necessary at the system peak. Since the load can be interrupted if needed at system peak (subject to the discretion of the utility), it is appropriate that this load be treated the same as load that is not operating at the time of the peak and not be included in the peak allocation factor. This approach is also supported by DEP's resource planning over the past decades, where it builds capacity to meet summer peaks and where it does not build capacity for curtailable loads.<sup>6</sup>

## VI. GRID IMPROVEMENT PLAN

### Q. WHAT IS THE GRID IMPROVEMENT PLAN?

A. According to the Application, the Grid Improvement Plan is a long-term program of distribution and transmission system investments intended to "improve reliability to avoid outages and speed restoration; harden the grid to protect against cyber and physical threats; expand solar and other innovative technologies across a two-way, smart-thinking grid; and give customers more options and control over their energy use and tools to save money."<sup>7</sup> The specific projects and programs under the plan are detailed in the South Carolina Grid Improvement Plan included as Exhibit 9 to Mr. Jay Oliver's testimony.

### Q. DID DEP MAKE ANY GRID IMPROVEMENT PLAN INVESTMENTS DURING THE TEST YEAR IN THIS CASE?

A. No. All of the proposed Grid Improvement Plan investments will occur outside the test year. Mr. Oliver testifies that several foundational projects for the Grid Improvement Plan were initiated and completed in 2018, and the Grid Improvement Plan investments themselves will be made in 2019, 2020, and 2021.

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<sup>6</sup> As DEP has explained related to its choice of the Summer ICP capacity cost allocation method: "production demand-related costs being allocated in this case were incurred on the basis of integrated resource planning predicated on summer peak planning." DEP response to ORS Request 1-8.

<sup>7</sup> Application at 6.

1    **Q.    WHAT IS THE COST OF THE GRID IMPROVEMENT PLAN?**

2    A.    DEP-proposed investment on a system basis is \$168 million in 2019 and \$329 million in  
3           2020, and the South Carolina retail allocated portion for ratemaking purposes of the  
4           proposed system spend is \$20 million for 2019 and \$41 million for 2020.

5    **Q.    HOW DOES DEP PROPOSE TO RECOVER THE COSTS ASSOCIATED WITH**  
6           **GRID IMPROVEMENT PLAN PROJECTS?**

7    A.    DEP proposes two “step up” rate increases to recover the costs of Grid Improvement Plan  
8           projects. Phase 1 rates would go into effect on June 1, 2020, and would recover the costs  
9           associated with the Grid Improvement Plan investments placed into service in calendar  
10          year 2019. Phase 2 rates would go into effect on June 1, 2021, and would recover the costs  
11          associated with the investments included in the plan that are placed into service in calendar  
12          year 2020. DEP also requests that investment placed in service after December 31, 2018  
13          be deferred until those costs are included in base rates, either through Phase 1 or Phase 2  
14          rates, or in a subsequent base rate case. DEP’s overall rate proposal, therefore, is a multi-  
15          year rate increase, with the bulk of the base rate increase proposed to take effect as of June  
16          1, 2019; the Phase 1 Grid Improvement Plan rate increase proposed to take effect as of  
17          June 1, 2020; and the Phase 2 Grid Improvement Plan increase proposed to take effect as  
18          of June 1, 2021.

19   **Q.    WHAT SPECIFICALLY DOES DEP REQUEST THAT THE COMMISSION**  
20          **APPROVE WITH REGARD TO THE GRID IMPROVEMENT PLAN?**

21   A.    DEP requests that the Commission approve the Grid Improvement Plan, along with the  
22          associated Phase 1 and Phase 2 rates. It is worth noting that the Grid Improvement Plan  
23          includes projects to be built in 2021, but DEP does not request approval for cost recovery  
24          for that year.

1 **Q. DO YOU HAVE A POSITION ON THE PROJECTS PROPOSED IN THE GRID**  
2 **IMPROVEMENT PLAN?**

3 A. I do not have a position at this time on whether any of the specific projects or associated  
4 costs proposed in the Grid Improvement Plan are reasonable and necessary. In my view,  
5 this issue should be considered, and the decision should be made, after the investments  
6 have been made and the plant is in service as is done with all other new plant in service.

7 **Q. SHOULD DEP BE ALLOWED TO ESTABLISH A SPECIAL RATEMAKING**  
8 **MECHANISM FOR RECOVERY OF THESE COSTS?**

9 A. In general, traditional ratemaking in a rate case is preferable to single issue ratemaking.  
10 However, based on the information presented by DEP and, because of the nature of these  
11 Grid Improvement Plan costs, the concept of separating out the costs related to these  
12 projects into a separate recovery mechanism could be a reasonable approach. Of course,  
13 some or all of the costs could also be considered by the Commission as normal investments  
14 that should be recovered once they are placed into service through base rates. However,  
15 whatever recovery mechanism is used, there should be reasonable assurances that the  
16 consumers will not lose any of the protections afforded by more traditional, after-the-fact  
17 prudence review. Moreover, consumers should receive some benefit in exchange for any  
18 special ratemaking treatment that provides greater assurance of timely recovery for the  
19 utility. In this regard, I would recommend that approval for the Grid Improvement Plan  
20 step-up rate process be conditioned on DEP agreeing not to seek a separate base rate  
21 increase to take effect through the same period (through May 2022). If DEP is to receive  
22 a special ratemaking treatment including some degree of pre-approval of these rate  
23 increases, then customers should have some degree of certainty that they will not be facing  
24 another base rate increase on top of these increases at the same time. This idea is similar  
25 in concept to the requirement that a utility may not file another rate change request for 12  
26 months after a rate change request is filed. Moreover, if DEP will be seeking a rate increase  
27 for the same period, then the need for a separate Grid Improvement Plan process for that  
28 period seems less evident.

1 **Q. SHOULD INVESTMENTS PROJECTED FOR 2021 BE CONSIDERED OR**  
2 **APPROVED AT THIS TIME AS PART OF THE GRID IMPROVEMENT PLAN?**

3 A. No. According to the Grid Improvement Plan, the projected cost of DEP South Carolina  
4 investments for 2021 is more than the projected costs for 2019 and 2020 combined (\$72.6  
5 million in 2021 compared to \$22.5 million in 2019 and \$48.6 million in 2020).<sup>8</sup> Since  
6 these investments are not scheduled to occur until several years down the road, and since  
7 DEP has not even proposed rates for 2021 investments in this case, the 2021 projects should  
8 not be considered or approved as part of the Grid Improvement Plan in this case.

9 **Q. DO YOU HAVE A RECOMMENDATION ON THE ALLOCATION APPROACH**  
10 **PROPOSED BY DEP?**

11 A. Yes. Since the Grid Improvement Plan is comprised primarily of distribution and  
12 transmission projects, the manner in which DEP proposes to allocate the costs associated  
13 with these projects to the customer classes, specifically by using the allocation factors for  
14 these types of costs, is reasonable and appropriate. Therefore, to the extent the Commission  
15 allows the costs of any proposed Grid Improvement Plan projects in rates, I recommend  
16 that the Commission approve the cost allocation methodology for these costs as proposed  
17 by DEP.

18 **Q. DO YOU HAVE ANY CONCERNS WITH REGARD TO THE GRID**  
19 **IMPROVEMENT PROGRAM REVIEW PROCESS?**

20 A. Yes. Although DEP provides a detailed plan as part of the application in this case, there is  
21 no way to be certain that all of the projects in that plan will be built during the designated  
22 periods. There is also no way to be certain that the cost estimates included in the plan  
23 accurately reflect the costs of the various projects at the time the investments are made. It  
24 is simply premature to evaluate and make a determination on the reasonableness and  
25 prudence of the future Grid Improvement Plan projects.

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<sup>8</sup> Oliver Testimony, Exhibit 9 at 1.

1   **Q.   PLEASE CONTINUE.**

2   A.   The Grid Improvement Plan and process as proposed will also limit the ability of the  
3       Commission and interested parties to review the projects and the costs for prudence and  
4       reasonableness after the investments are made. Under traditional ratemaking, when a  
5       utility makes an investment, the utility may seek approval in a rate case to include the  
6       project in rate base, and to include the costs of the project in rates to customers, only after  
7       the project is placed in service. Under this process, parties and the Commission have the  
8       opportunity to review the project, including the actual costs, for reasonableness and  
9       prudence after the project is completed and placed in service. If elements of the project, or  
10      the cost of the project, are found to be unreasonable or imprudent, the Commission may  
11      disallow a portion of the cost. This after-the-fact review process is an important safeguard  
12      for ratepayers. Under DEP's proposal, however, plans for Grid Improvement Plan  
13      investments would be subject to some degree of before-the-fact review (in this proceeding),  
14      but there is no real opportunity for all parties to fully review projects if necessary for  
15      prudence and reasonableness after they are complete.

16   **Q.   PLEASE EXPLAIN THE REVIEW PROCESS PROPOSED BY DEP.**

17   A.   According to Witnesses Oliver and Bateman, parties will have a chance to review Grid  
18       Improvement Plan work completed in advance of the effective date of the Phase 1 and  
19       Phase 2 rates because: (i) DEP would be willing to provide quarterly status reports to  
20       apprise stakeholders on the progress made on projects and DEP's expenditures; and (ii)  
21       there would be a 60 day period for ORS to perform an audit on the completed projects and  
22       the costs, and for ORS to complete and file an audit report. Under this audit process, ORS  
23       would audit the plant in service balances and confirm whether DEP has placed in service  
24       the amounts included in the updated version of Bateman Exhibit 4 (which will show the  
25       actual Grid Improvement Plan balances placed in service and incremental O&M by month  
26       during the prior calendar year) and spent the incremental O&M, and that the investments  
27       were included in the approved Grid Improvement Plan.

1 **Q. IN YOUR VIEW, IS DEP'S PROPOSED PROCESS ADEQUATE TO PROTECT**  
2 **CONSUMERS FROM POSSIBLE UNREASONABLE OR IMPRUDENT COSTS**  
3 **ASSOCIATED WITH GRID IMPROVEMENT PLAN INVESTMENTS?**

4 A. No. The proposed audit process is clearly designed to be a limited process that apparently  
5 does not entail an after-the-fact review of whether Grid Improvement Plan investments are  
6 reasonable and prudent. According to DEP, the "the audit should be limited in scope and  
7 not a recreation of the rate case . . . , or an examination of the appropriateness of the Grid  
8 Improvement Plan."<sup>9</sup> Further, the audit process as outlined in Ms. Bateman's testimony is  
9 extremely short – only 60 days – and appears to be limited only to ORS. The bottom line  
10 is that under DEP's proposal, the only opportunity there is to evaluate the reasonableness  
11 and prudence of the Grid Improvement Plan investments is in this rate case, several years  
12 in advance of when most of the projects under the plan are to be built and placed into  
13 service. I believe that the after-the-fact review process should be expanded so as to allow  
14 for a meaningful prudence review process upon the request of ORS or an interested  
15 stakeholder where all issues can be on the table, including whether the investments were  
16 reasonable and necessary and the plant is used and useful. While a pre-review might be  
17 informative, it should not be the final word on the prudence and reasonableness of the  
18 projects included in the Grid Improvement Plan.

19 **Q. WHAT DO YOU RECOMMEND ON THIS POINT?**

20 A. In my view, DEP has failed to demonstrate that the Grid Improvement Plan projects are so  
21 extraordinary in nature that they require the proposed pre-approval process with limited  
22 after-the-fact review. To be clear, I am not objecting to the proposal to begin recovery of  
23 these costs on the timetable proposed by DEP (subject to return of any funds recovered in  
24 excess of prudent costs for these facilities during the applicable year), only that the  
25 opportunity for a more robust and reasonable process for a final review of the prudence  
26 should be in place after the plant is in service. In addition to the ORS audit, this process  
27 should provide for a reasonableness and prudence review at the request of an interested

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<sup>9</sup> Bateman Testimony at 39.

stakeholder or ORS, should be open to all interested parties in addition to ORS, and should provide for more time to conduct the review.

**VII. TREATMENT OF YUCCA MOUNTAIN LITIGATION AWARDS FROM THE UNITED STATES DEPARTMENT OF ENERGY TO DEP**

**Q. WHAT IS THE YUCCA MOUNTAIN NUCLEAR WASTE PROJECT?**

A. Located 90 miles from Las Vegas, the Yucca Mountain project was approved by Congress in 2002 to provide a permanent nuclear waste storage site. However, the facility was never established and the United States Department of Energy terminated its efforts to license a repository at Yucca Mountain in 2010.

**Q. DID DEP'S CUSTOMERS PROVIDE FUNDING TO THE DOE FOR THIS NOW-TERMINATED PROJECT?**

A. Yes. According to DEP, since the mid-1980s, customers have made payments to DEP and its predecessor utilities, which in turn were paid to DOE in order to fund a national spent nuclear waste disposal site.<sup>10</sup> DEP collected these payments from customers through a \$1 per MWh charge on nuclear-produced electricity recovered through the fuel factor.<sup>11</sup> In total, DEP's North Carolina and South Carolina customers paid \$754,156,502<sup>12</sup> to DOE for the spent nuclear waste disposal site. Of course, after adjusting for inflation, the value of these fees in today's dollars is far higher.

**Q. NOW THAT THIS NUCLEAR WASTE STORAGE FACILITY HAS BEEN TERMINATED, HAS DEP SOUGHT TO RECOVER THE FUNDS THAT IT CONTRIBUTED TO THIS PROJECT FROM THE DOE?**

A. DEP and other utilities with nuclear power plants have brought lawsuits against DOE. DEP's lawsuits did not focus on the return of the funds per se, but sought damages for costs

<sup>10</sup> Docket No. 2016-227-E, Response to Nucor DR 4-6(a).

<sup>11</sup> Docket No. 2016-227-E, Response to Nucor DR 4-6(b).

<sup>12</sup> Docket No. 2016-227-E, Response to Nucor DR 4-6(a). This figure is gross of payments made by joint owner North Carolina Eastern Municipal Power Agency.

DEP incurred as a result of DOE's failure to take and store DEP's spent nuclear fuel. DEP has had substantial success in its lawsuits:

- In 2011, DEP recorded a \$84,165,668 litigation award for Phase 1 of DEP's suit (covering the time period 1995-2005) net of the joint owner's share.<sup>13</sup>
- In 2014, DEP recorded an additional \$69,159,504 award in Phase 2 of the litigation (covering the time period 2006-2010) net of the joint owner's share.<sup>14</sup>
- In 2018, DEP recorded an additional \$41,047,268 award in Phase 3 of the litigation (covering the time period 2011-2013) net of the joint owner's share.<sup>15</sup>

**Q. WHAT DID DEP DO WITH THE FUNDS IT RECEIVED THROUGH THESE LITIGATION AWARDS?**

A. As explained by DEP, for the DEP portion of the litigation awards (net of the joint owner), credits were made to the income statement and balance sheet accounts based on where the original costs were booked. Credits to the income statement were made to above the line accounts and would have reduced the retail revenue requirement for the years in which they were booked (2011, 2014, and 2018).<sup>16</sup> Credits to the balance sheet were made to accounts included in rate base. For the 2011 award, \$56,921,426 was applied as a credit to rate base, and \$27,244,241 was applied as a credit to O&M, net of the joint owner share.<sup>17</sup> For the 2014 award, \$62,867,022 was applied as a credit to rate base, and \$6,292,483 was applied as a credit to O&M, net of the joint owner share.<sup>18</sup> For the 2018 award, \$31,000,262 was applied as a credit to rate base, and \$10,047,005 was applied as a credit to O&M, net of the joint owner share.<sup>19</sup>

<sup>13</sup> Attachments to Response to Nucor DR 2-16(c)(ii).

<sup>14</sup> *Id.*

<sup>15</sup> *Id.*

<sup>16</sup> Response to Nucor DR 2-16(c)(iii).

<sup>17</sup> Attachments to Response to Nucor DR 2-16(c)(ii).

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

1 **Q. WHAT IS THE EFFECT OF DEP'S TREATMENT OF THESE LITIGATION**  
2 **AWARDS ON CONSUMER RATES?**

3 A. The amounts used to reduce O&M expenses in prior years (2011 and 2014) did not and  
4 will not affect or reduce the rates charged to consumers. These expenses were recorded in  
5 years where there was no rate case and since they are prior to the test period in this case,  
6 absent some adjustment, they will not be recognized in the calculation of the revenue  
7 requirement in this rate case. Similarly, the most recent award (2018) also occurred outside  
8 the test year, and I believe that amounts used to reduce O&M expenses in 2018 also will  
9 not be recognized in the revenue requirement calculation absent some adjustment. When  
10 a portion of the litigation award is treated in this manner, the shareholders of the Company  
11 benefit (since applying the refunds to O&M reduced DEP's expenses in 2011, 2014, and  
12 2018), but the consumers who paid for the Yucca Mountain Project realize no direct  
13 benefits.

14 On the other hand, the portion of the litigation award used to reduce plant in service will  
15 provide a benefit to future ratepayers by reducing the return component of the utility's  
16 revenue requirements. However, it will take a long time for consumers to realize a  
17 significant benefit from this accounting treatment, which spreads the benefit over the life  
18 of the plant that was offset by the award. And, as time progresses, more of the future  
19 consumers who realize the benefit will not be the same consumers who historically paid  
20 the spent nuclear fuel storage fee through the fuel factor.

21 **Q. IN YOUR VIEW, IS DEP'S TREATMENT OF THE LITIGATION AWARDS THE**  
22 **BEST APPROACH?**

23 A. No. I am concerned that DEP's treatment of these litigation awards does not promptly and  
24 fairly share the benefits of these awards with consumers. Over the years, DEP ratepayers  
25 paid many millions of dollars to DEP on the basis of kWh usage. The amounts collected  
26 were then paid to DOE for the Yucca Mountain project. Without these payments, DOE  
27 would not have been obligated to provide storage to DEP and there would have been no  
28 basis to sue for damages. DEP may have used a reasonable approach to these awards from  
29 strictly an accounting standpoint. However, from a regulatory policy standpoint, DEP's

1 treatment of the dollars recovered from DOE is less favorable than it could be to consumers,  
2 even though consumers paid the bill for the failed project. I recommend that all, or at least  
3 a portion, of the litigation awards be passed back to consumers in a more direct and prompt  
4 manner.

5 **Q. WHAT MECHANISM COULD BE USED TO RETURN SOME OR ALL OF THE**  
6 **LITIGATION AWARDS RELATED TO THE YUCCA MOUNTAIN PROJECT TO**  
7 **CONSUMERS?**

8 A. The Commission could require DEP to return some or all of the South Carolina retail  
9 jurisdictional portion of these awards (or at least amounts credited to rate base) promptly  
10 to consumers in the same manner as the payments to DOE were collected. A rider could  
11 be established to provide for a per-kWh credit, designed to assure that the consumers' share  
12 of the litigation awards are returned over some reasonably short period. This rider could  
13 also be used to pass through future damage awards as they are received. This would also  
14 enable the amounts returned to ratepayers to be easily tracked. Returning the funds over a  
15 relatively short period of time would hopefully enable more of the consumers who  
16 originally paid for the Yucca Mountain Project to receive the benefit of the credit. This  
17 approach also would have the added benefit of offsetting some of the impact of the rate  
18 increase proposed by DEP. To the degree that amounts already credited to rate base are to  
19 be returned to consumers, DEP would need to appropriately increase rate base by these  
20 amounts. At a minimum, the Commission should consider requiring DEP and other  
21 interested stakeholders to work together to develop a method and offer recommendations  
22 on how to return some or all of these dollars to ratepayers.

23 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

24 A. Yes.